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10/500,575	07/01/2004	Shinya Kadono	2004_1005A	4779
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WENDEROTH, LIND & PONACK L.L.P.			ROBERTS, JESSICA M	
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Suite 400 East			ART UNIT	PAPER NUMBER
Washington, DC 20005-1503			2621	
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			10/27/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/500,575	KADONO ET AL.	
	Examiner	Art Unit	
	JESSICA ROBERTS	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 06/18/2009.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 27-30 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 27-30 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) Notice of Informal Patent Application

6) Other: _____.

DETAILED ACTION

Acknowledgment of Amendments

Applicant's amendment filed on 06/18/2009 overcomes the following objection(s)/rejection(s):

The rejection of claims 27-28 under 35 U.S.C. 101 has been withdrawn in view of Applicants amendment.

The objection to the drawings has been withdrawn in view of Applicants amendment.

Response to Arguments

1. Applicant's arguments filed 06/18/2009 have been fully considered but they are not persuasive.

As to Applicants argument that ISO-14496 fails to disclose or suggest switching between methods for generating a vector by using a vector of a block located at a corner of a co-located block.

The Examiner respectfully disagrees. Sohm discloses generating a vector of a block located at corner block; see fig. 9 and col.17 line 20-28.

As to Applicants argument that Tucker in no way discloses or suggest using motion vector of a co-located block, much less switching between methods for generating a vector by using a vector of a block located at a corner of a co-located block when the co-located block is composed of a plurality of blocks.

The Examiner respectfully disagrees. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking

references individually where the rejections are based on combinations of references.

See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, Sohm teaches A motion compensation method for generating a predictive image of a current macroblock included in a current picture with reference to a motion vector of an adjacent macroblock that is located adjacent to the current macroblock, the motion compensation method comprising: specifying, using an adjacent macroblock specifying unit (fig. 1 and 2), plural adjacent macroblocks which are in the current macroblock and are already decoded (column 17 line 11-19 and Fig. 9); deriving, using a co-located macroblock specifying unit (fig. 1 and 2), a motion vector of a current block included in the current macroblock using plural motion vectors of the specified plural adjacent macroblocks (column 2 line 65-67 and fig. 4); specifying, using a co-located macroblock specifying unit (fig. 1 and 2), a co-located macroblock which is co-located with the current the current macroblock and included in a picture different from the current picture including the current macroblock (fig. 4); obtaining, using a motion vector obtaining unit (fig. 1 and 2), a motion vector of a corner block located in a corner of the co-located macroblock (column 17 line 20-28 and fig. 9). Sohm does not explicitly disclose when a co-located block is composed of a plurality of blocks for which motion compensation has been performed, the co-located bloc, being co-located with the current block included in the current macroblock and being included in the co-located macroblock;, wherein in the generating of a predictive image of the current block, the generating is performed in such a manner that, if a size of the obtained motion vector is judged within the

predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be "0", and the generating is performed in such a manner that, if a size of the obtained motion vector of the corner block is judged beyond the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be the derived motion vector.

However ISO' teaches co-located block is composed of a plurality of blocks for which motion compensation has been performed, the co-located bloc, being co-located with the current block included in the current macroblock and being included in the co-located macroblock (7.6.9.5.1 Formation of motion vectors for the direct mode). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of ISO'14496-2 with Sohm for providing improved image coding.

Sohm (modified by ISO-14496-2) does not explicitly teach judging, using a generating unit, if a size of the obtained motion vector of the corner block is within a predetermined range; generating a predictive image of the current block which is co-located with the co-located block, based on the result of the judging of whether the size of the obtained motion vector of the corner block is within the predetermined range.

However, Tucker teaches judging, using a generating unit if a size of the obtained motion vector of the corner block is within a predetermined range; generating a predictive image of the current block which is co-located with the co-located block, based on the result of the judging of whether the size of the obtained motion vector of the corner block is within the predetermined range (The video processing system

processes a compressed video data stream including a plurality of macroblocks of which some of the macroblocks have a motion vector associated therewith. The method includes the steps of selecting macroblocks in the compressed video data stream whose motion vector exhibit a magnitude greater than a predetermined threshold value. The remaining macroblocks whose motion vector or motion vectors do not exceed the threshold are not motion compensated, column 4 line 27-39, column 7 line 29-51, and fig. 3-4B.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Tucker with Sohm (modified by ISO'14496-2) for improved efficiency of motion compensation. Sohm (modified by ISO'14496-2 and Tucker) is silent in regards to wherein in the generating of a predictive image of the current block, the generating is performed in such a manner that, if a size of the obtained motion vector of the corner block is judged within the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be "0", and the generating is performed in such a manner that, if a size of the obtained motion vector of the corner block is judged beyond the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be the derived motion vector.

However, Frederiksen teaches generating of a predictive image of the current block, the generating is performed in such a manner that, if a size of the obtained motion vector of the corner block is judged within the predetermined range, the

predictive image of the current block is generated by setting the motion vector of the current block to be “0” (Frederiksen teaches where data entering the vector quantizer 21 first undergoes threshold based data reduction. Each incoming vector is compared to a threshold value which is set by the data flow controller 60 based on the output FIFO 64 occupancy. If the resultant difference is less than the threshold value, a zero vector value is inserted for the vector, column 7 line 45-50. Therefore, taking the teachings of Sohm where it is disclosed to obtain a corner macroblock (fig. 9 and col. 17 line 20-28) with Frederiksen's teaching of each incoming vector is compared to a threshold value which is set by the data flow controller 60 based on the output FIFO 64 occupancy. If the resultant difference is less than the threshold value, a zero vector value is inserted for the vector, it is clear to the Examiner that now disclosed, is for the motion vector of the corner block is within a predetermined range, the image is generated by inserting a zero value vector for the vector, which reads upon the claimed limitation).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Frederiksen with Sohm (modified by ISO'14496-2 and Tucker) for providing more efficient image processing. Sohm (modified by ISO'14496-2, Tucker, and Frederiksen) are silent in regards to generating is performed in such a manner that, if a size of the obtained motion vector of the corner block is judged beyond the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be the derived motion vector.

However, Official Notice is taken that both the concept and advantage of providing the limitations as claimed are notoriously well known and expected in the art, and therefore, would have been obvious to incorporate in Sohm (modified by ISO'14496-2, Tucker, and Frederiksen) for providing more efficient motion compensation.

As to Applicants argument that Frederiksen also fails to disclose or suggest switching between methods for generating a vector by using a vector of block located at a corner of a co-located block when the co-located block is composed of a plurality of blocks.

The Examiner respectfully disagrees. Frederiksen teaches generating of a predictive image of the current block, the generating is performed in such a manner that, if a size of the obtained motion vector of the corner block is judged within the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be “0” (Frederiksen teaches where data entering the vector quantizer 21 first undergoes threshold based data reduction. Each incoming vector is compared to a threshold value which is set by the data flow controller 60 based on the output FIFO 64 occupancy. If the resultant difference is less than the threshold value, a zero vector value is inserted for the vector, column 7 line 45-50. Therefore, taking the teachings of Sohm where it is disclosed to obtain a corner macroblock (fig. 9 and col. 17 line 20-28) with Frederiksen's teaching of each incoming vector is compared to a threshold value which is set by the data flow controller 60 based on the output FIFO 64 occupancy. If the resultant difference is less than the threshold value, a zero vector value is inserted for the vector, it is clear to the Examiner that now

disclosed, is for the motion vector of the corner block is within a predetermined range, the image is generated by inserting a zero value vector for the vector, which reads upon the claimed limitation).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Frederiksen with Sohm (modified by ISO'14496-2 and Tucker) for providing more efficient image processing.

As to Applicants argument that Chang fails to overcome the efficiencies noted above for Sohm, ISO-14496, Tucker, and Frederiksen.

The Examiner respectfully disagrees. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, Sohm (modified by ISO'14496-2, Tucker, and Frederiksen) as whole are silent in regards The motion compensation method according to claim 27, wherein a size of the current macroblock, the adjacent macroblock and the co-located macroblock is 16 pixel x 16 pixels, a size of the current block and the co-located block is 8 pixels x 8 pixels, and a size of each of the plurality of blocks which are included in the co-located macroblock and for which motion compensation has been performed in 4 pixels x 4 pixels.

However, Chang teaches wherein a size of the current macroblock, the adjacent macroblock and the co-located macroblock is 16 pixel x 16 pixels, a size of the current block and the co-located block is 8 pixels x 8 pixels, and a size of each of the plurality of

blocks which are included in the co-located macroblock and for which motion compensation has been performed in 4 pixels x 4 pixels. (Fig. 2 illustrates one iteration of a conventional block-matching process. Current picture 220 is shown divided into blocks. Each block can be any size; however, in an MPEG device, for example, current picture 220 would typically be divided into blocks each consisting of 16.times. 16 -sized macroblocks, column 2 line 54-59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of Chang for providing more efficient motion estimation.

Applicant has not traversed the rejection of Official Notice, and the common knowledge or well known in the art statement is taken to be admitted prior art because applicant has failed to traverse the examiners assertion of official notice.

Status of Claims

1. Claims 27-30 are currently pending in Application 10/500,575. Claims 1-26 have been cancelled by Applicant's amendment filed on 10/31/2008.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sohm et al., US-7,260,148 in view of Information Technology-Coding of audio-visual-objects- Part 2: Visual ISO/IEC 14496-2 Second Edition 2001-12-01 (herein referenced as ISO-14496) in view of Tucker et al., US-5,903,313 in view of Frederiksen et al., US-5,272,529 and further in view of well known prior art (Official Notice).

5. Regarding **claim 27**, Sohm teaches A motion compensation method for generating a predictive image of a current macroblock included in a current picture with reference to a motion vector of an adjacent macroblock that is located adjacent to the current macroblock, the motion compensation method comprising: specifying, using an adjacent macroblock specifying unit (fig. 1 and 2), plural adjacent macroblocks which are in the current macroblock and are already decoded (column 17 line 11-19 and Fig. 9); deriving, using a co-located macroblock specifying unit (fig. 1 and 2), a motion vector of a current block included in the current macroblock using plural motion vectors of the specified plural adjacent macroblocks (column 2 line 65-67 and fig. 4); specifying, using a co-located macroblock specifying unit (fig. 1 and 2), a co-located macroblock

which is co-located with the current the current macroblock and included in a picture different from the current picture including the current macroblock (fig. 4); obtaining, using a motion vector obtaining unit (fig. 1 and 2), a motion vector of a corner block located in a corner of the co-located macroblock (column 17 line 20-28 and fig. 9). Sohm does not explicitly disclose when a co-located block is composed of a plurality of blocks for which motion compensation has been performed, the co-located bloc, being co-located with the current block included in the current macroblock and being included in the co-located macroblock; wherein in the generating of a predictive image of the current block, the generating is performed in such a manner that, if a size of the obtained motion vector is judged within the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be “0”, and the generating is performed in such a manner that, if a size of the obtained motion vector of the corner block is judged beyond the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be the derived motion vector.

6. However ISO' teaches co-located block is composed of a plurality of blocks for which motion compensation has been performed, the co-located bloc, being co-located with the current block included in the current macroblock and being included in the co-located macroblock (7.6.9.5.1 Formation of motion vectors for the direct mode).

7. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of ISO'14496-2 with Sohm for providing improved image coding.

8. Sohm (modified by ISO-14496-2) does not explicitly teach judging, using a generating unit, if a size of the obtained motion vector of the corner block is within a predetermined range; generating a predictive image of the current block which is co-located with the co-located block, based on the result of the judging of whether the size of the obtained motion vector of the corner block is within the predetermined range.

9. However, Tucker teaches judging, using a generating unit if a size of the obtained motion vector of the corner block is within a predetermined range; generating a predictive image of the current block which is co-located with the co-located block, based on the result of the judging of whether the size of the obtained motion vector of the corner block is within the predetermined range (The video processing system processes a compressed video data stream including a plurality of macroblocks of which some of the macroblocks have a motion vector associated therewith. The method includes the steps of selecting macroblocks in the compressed video data stream whose motion vector exhibit a magnitude greater than a predetermined threshold value. The remaining macroblocks whose motion vector or motion vectors do not exceed the threshold are not motion compensated, column 4 line 27-39, column 7 line 29-51, and fig. 3-4B.

10. Therefor, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Tucker with Sohm (modified by ISO'14496-2) for improved efficiency of motion compensation.

11. Sohm (modified by ISO'14496-2 and Tucker) is silent in regards to wherein in the generating of a predictive image of the current block, the generating is performed in

such a manner that, if a size of the obtained motion vector of the corner block is judged within the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be "0", and the generating is performed in such a manner that, if a size of the obtained motion vector of the corner block is judged beyond the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be the derived motion vector.

12. However, Frederiksen teaches generating of a predictive image of the current block, the generating is performed in such a manner that, if a size of the obtained motion vector of the corner block is judged within the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be "0" (Frederiksen teaches where data entering the vector quantizer 21 first undergoes threshold based data reduction. Each incoming vector is compared to a threshold value which is set by the data flow controller 60 based on the output FIFO 64 occupancy. If the resultant difference is less than the threshold value, a zero vector value is inserted for the vector, column 7 line 45-50. Therefore, taking the teachings of Sohm where it is disclosed to obtain a corner macroblock (fig. 9 and col. 17 line 20-28) with Frederiksen's teaching of each incoming vector is compared to a threshold value which is set by the data flow controller 60 based on the output FIFO 64 occupancy. If the resultant difference is less than the threshold value, a zero vector value is inserted for the vector, it is clear to the Examiner that now disclosed, is for the motion vector of

the corner block is within a predetermined range, the image is generated by inserting a zero value vector for the vector, which reads upon the claimed limitation).

13. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Frederiksen with Sohm (modified by ISO'14496-2 and Tucker) for providing more efficient image processing.

14. Sohm (modified by ISO'14496-2, Tucker, and Frederiksen) are silent in regards to generating is performed in such a manner that, if a size of the obtained motion vector of the corner block is judged beyond the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be the derived motion vector.

15. However, Official Notice is taken that both the concept and advantage of providing the limitations as claimed are notoriously well known and expected in the art, and therefore, would have been obvious to incorporate in Sohm (modified by ISO'14496-2, Tucker, and Frederiksen) for providing more efficient motion compensation.

16. Re claims 29, see the rejection and analysis for claim 27, except this is a method claim with the same limitations as claim 27.

17. Claims 28 and 30 rejected under 35 U.S.C. 103(a) as being unpatentable over Sohm et al., US-7,260,148 in view of Information Technology-Coding of audio-visual-objects- Part 2:Visual ISO/IEC 14496-2 Second Edition 2001-12-01 (herein referenced as ISO-14496) in view of Tucker et al., US-5,903,313 in view of Frederiksen et al., US-

5,272,529 in view of well known prior art (Official Notice) and further in view of Chang et al., US-6,483,876.

18. Regarding **claim 28**, Sohm (modified by ISO'14496-2, Tucker, and Frederiksen) as whole are silent in regards The motion compensation method according to claim 27, wherein a size of the current macroblock, the adjacent macroblock and the co-located macroblock is 16 pixel x 16 pixels, a size of the current block and the co-located block is 8 pixels x 8 pixels, and a size of each of the plurality of blocks which are included in the co-located macroblock and for which motion compensation has been performed in 4 pixels x 4 pixels.

19. However, Chang teaches wherein a size of the current macroblock, the adjacent macroblock and the co-located macroblock is 16 pixel x 16 pixels, a size of the current block and the co-located block is 8 pixels x 8 pixels, and a size of each of the plurality of blocks which are included in the co-located macroblock and for which motion compensation has been performed in 4 pixels x 4 pixels. (Fig. 2 illustrates one iteration of a conventional block-matching process. Current picture 220 is shown divided into blocks. Each block can be any size; however, in an MPEG device, for example, current picture 220 would typically be divided into blocks each consisting of 16.times. 16 -sized macroblocks, column 2 line 54-59).

20. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of Chang for providing more efficient motion estimation.

21. Re claim 30, see the rejection and analysis for claim 28, except this is a method claim with the same limitations as claim 28.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA ROBERTS whose telephone number is (571)270-1821. The examiner can normally be reached on 7:30-5:00 EST Monday-Friday, Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marsha D. Banks-Harold/
Supervisory Patent Examiner, Art Unit 2621
/Jessica Roberts/
Examiner, Art Unit 2621